GLOBAL PRECIPITATION MISSION AND CANADA

SOME INITIAL THOUGHTS

CANADIAN PRECIPITATION ISSUES

- Water is a critical issue:

  water supply & quality, snowpack melt,

  floods & droughts, hydro-electricity,

  lake levels, tourism, transportation …

- Snow is a major aspect of the precipitation regime with special challenges
- Inadequate observation of precipitation

  sparse surface network

  no radars in the North

SOME SCIENTIFIC AND TECHNICAL QUESTIONS

- How much precipitation (rain, snow, mixed) falls over Canada and over what spatial and temporal scales?
- How is this precipitation produced (including its moisture sources) and what is its role within the overall water cycle?
- How well are we predicting precipitation with our NWP and climate models?
- How can we better handle precipitation-related issues in the future?

A FEW ILLUSTRATIVE OVERHEADS GO IN HERE

- Surface network (and reduction)
- Radar network
- Radar examples of falling snow
- SWE example

WHAT CAN CANADA GAIN FROM GPM?

- Precipitation information over under-observed regions
- Potential application for ground-based radar
- Satellite information for snowcover (SWE)
- Data for NWP, climate & hydrological models
- Access to unique scientific data
- Part of international team addressing precipitation

HOW CAN CANADA CONTRIBUTE TO GPM?

- Canadian monitoring network
- Canadian radar network
- Potential northern field sites
- NWP with data assimilation
- Hydrological modelling
- Expertise in:
  - precipitation physics and measurement
  - radar meteorology
  - snowcover measurement (satellite, in-situ)
  - cold climate research
- Large land mass with highly variable precipitation

COMPLEMENTARY EFFORTS

- WMO
  - GCOS, Precipitation Intercomparison, …
- World Climate Research Program
  - GEWEX, CLiC, CLIVAR, CEOP
- World Weather Research Program
- …

POTENTIAL CANADIAN INVOLVEMENT

- Meteorological Service of Canada
- Canadian universities
- ...